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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/523,698

02/03/2005

Tetsuro Sato

2922-483

8541

6449

7590

06/30/2008

ROTHWELL, FIGG, ERNST & MANBECK, P.C.

1425 K STREET, N.W.

SUITE 800

WASHINGTON, DC 20005

EXAMINER

CHEN, VIVIAN

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

06/30/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/523,698	<b>Applicant(s)</b> SATO ET AL	
	<b>Examiner</b> Vivian Chen	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/3/2005</u> .  | 6) <input type="checkbox"/> Other: _____                          |

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, Formula 1 is vague and indefinite because it is unclear whether Applicant intends to claim a linear phenolic polymer comprising one or more units -R-phenol, or whether Applicant is attempting to claim a branched phenolic compound (in which case, n has a maximum value of 5).

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-4 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over:

claims 1-16 of U.S. Patent No. 6,831,129 (SATO ET AL).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the patent claims a laminate comprising a copper foil layer and a resin layer, wherein the resin layer comprises the recited components (1) and (2) and (3) in the recited amounts. The laminate is used to form a multilayer printed wiring board.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over:

(a) INADA ET AL (US 5,874,009); or

(b) SATO ET AL (US 2002/0106516); or

(c) ARATA ET AL (US 6,558,797); or

(d) EP 1 092 739 (EP '739);

in view of EP 1 116 774 (EP '774).

INADA ET AL discloses laminates comprising a copper foil layer and an curable resin layer, wherein the resin layer comprises 30-100 parts by weight (pbw) epoxy resin, 30-100 pbw novolac-type phenolic curing agent, and 30-70 pbw carboxylic acid-modified acrylonitrile-butadiene resin, wherein the laminate is suitable for forming electronic and multilayer circuitry components. (entire document, e.g., line 30, col. 4 to line 55, col. 5; line 30-50, col. 8; etc.)

SATO ET AL '516 discloses laminates comprising a copper foil layer and an curable resin layer, wherein the resin layer comprises 20-70 parts by weight (pbw) epoxy resin, and an effective amount of curing agent suitable for epoxy resins (e.g., phenol resin), and 5-30 pbw polyvinyl acetal or phenoxy resin, wherein the laminate is suitable for forming electronic and multilayer circuitry components. (entire document, e.g., paragraphs 8, 18, 23, 26, 28-29, 34-35, etc.)

ARATA ET AL discloses laminates comprising a copper foil layer and an curable resin layer, wherein the resin layer comprises epoxy resin (in typical amount of 100 pbw), an effective amount of a novolac-type phenolic curing agent (in typical amounts of 57.5 pbw), and 0-150 pbw additional resin (e.g., phenoxy, polyamide, etc.), wherein the laminate is suitable for forming electronic and multilayer circuitry components. (entire document, e.g., line 27-55, col. 2; line 3-14, 26-40, col. 6; Example 1; etc.)

EP '739 discloses laminates comprising a copper foil layer and an curable resin layer, wherein the resin layer comprises epoxy resin (typically 20 pbw), novolac-type phenolic curing agent (typically 45 pbw), and 5-50 pbw phenoxy resin, wherein the laminate is suitable for forming electronic and multilayer circuitry components. (entire document, e.g., paragraphs 6, 13, 15, 17-18, 21, 33; etc.)

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However, the above references do not explicitly disclose the recited phenolic compound.

EP '774 discloses that it is well known in the art to use phenolic curing agents comprising phenolic aralkyl or biphenyl-modified novolak resins as curing agents for epoxy-based coating compositions suitable for use in copper clad electronic components in order to form curable compositions with high heat resistance and low water absorption. (paragraphs 2, 12, 15-18, 24)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use effective amounts of known phenolic curing agents with high aromatic content as disclosed in EP '774 as the phenolic curing agents in the epoxy-based coating compositions of INADA ET AL or SATO ET AL '516 or ARATA ET AL or EP '739 in order to form copper-clad laminates with improved heat resistance and reduced moisture absorption.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano, can be reached on (571) 272-1398. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

June 19, 2008

/Vivian Chen/

Primary Examiner, Art Unit 1794